

2004 HURRICANE SURVIVAL GUIDE

BUILDING A STORM: Inside the monster that is a hurricane; how storms are made and why they generate so much destruction

SPECIAL TO THE BOOT

NATIONAL WEATHER SERVICE

There are no other storms like hurricanes on Earth. Views of hurricanes from satellites located thousands of miles above the Earth show how these powerful, tightly coiled weather systems are unique. Each year, on average, 10 tropical storms (of which six become hurricanes) develop over the Atlantic Ocean, Caribbean Sea or Gulf of Mexico.

Many of these storms remain over the ocean. However, an average of five hurricanes strike the United States coastline every three years.

Of these five, two will be major hurricanes, which are storms of Category Three or higher on the Saffir-Simpson scale, which corresponds to hurricanes with winds at or above 111 mph.

Timely warnings have greatly diminished hurricane fatalities in the United States. In spite of this, property damage continues to mount. There is little we can do about the hurricanes themselves. However, the National Oceanic and Atmospheric Administration's (NOAA's) Tropical Prediction Center and National Weather Service (NWS) field offices team up with other federal, state and local agencies; rescue and relief organizations; the private sector; and the news media in a huge warning and preparedness effort.

What are hurricanes and what causes them?

- Hurricanes and tropical storms are cyclones with tropical origins (tropical cyclones). When the winds

of a tropical storm (winds 39 - 73 mph) reach a constant speed of 74 mph or more, it is called a hurricane. Hurricane winds blow in a large spiral around a relatively calm center known as the "eye."

The "eye" is generally 20 to 30 miles wide, and the storm may have a diameter of 400 miles across. As a hurricane approaches, the skies will begin to darken and winds will grow in strength.

A hurricane can bring torrential rains, high winds, and storm surge as it nears land. A single hurricane

can last more than two weeks over open waters and can run a path across the entire length of the eastern seaboard.

- More dangerous than the high winds of a hurricane is the storm surge - a dome of ocean water that can be 20 feet high at its peak and 50 to 100 miles wide. The surge can devastate coastal communities as it sweeps ashore. In recent years, the fatalities associated with storm surge have been greatly reduced as a result of better warning and preparedness within coastal communities.
- Most deaths due to tropical cyclones are flood-related. Inland

flooding is a common occurrence with hurricanes and tropical storms. Torrential rains from decaying hurricanes and tropical storms can produce extensive urban and river flooding.

Winds from these storms located offshore can drive ocean water up the mouth of rivers, compounding the severity of inland flooding. Inland streams and rivers can flood and trigger landslides.



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Hurricane Andrew tore through Florida in 1992 causing extensive damage, but the deadliest hurricane in U.S. history laid waste to southern Texas in 1900, killing more than 6,000 American citizens.

Mud slides can occur in mountainous regions. In addition, hurricanes can spawn tornadoes, which add to the destructiveness of the storm.

Many people do not realize the threat of hurricanes as each one is different. Over the past several years, U.S. hurricane warning systems have provided adequate time for people on barrier islands and the immediate coastline to move inland when hurricanes threaten.

However, due to rapid population growth, it is becoming more difficult to evacuate people from

the barrier islands and other coastal areas because roads have not kept pace with expansion.

The problem is further compounded by the fact that 80 to 90 percent of the population now living in hurricane-prone areas have never experienced the core of a "major" hurricane.

Many of these people have been through weaker storms. The result is a false impression of a hurricane's damage potential. This often leads to complacency and delayed actions, which could result in the loss of many lives.

Hurricane survival often determined before the storm

COMPLIED BY

THE BOOT STAFF

WEB REPORT

Much of the fear associated with an impending hurricane can quickly be alleviated with good preparation and planning. Proper education prior to hurricane season and before storms arrive are key to survival. A hurricane consists of two simple but dangerous factors -- wind and water. You can reduce damage by being prepared. Residents who properly prepare themselves and their homes reduce their discomfort and damage from a hurricane dramatically.

Disaster prevention should include:

- Developing a Family Plan
- Creating a Disaster Supply Kit
- Securing your home

One of the most important decisions you will have to make is "Should I Evacuate?"

If you are asked to evacuate, you should do so without delay. But unless you live in a coastal or low-lying area, an area that floods frequently, or in manufactured housing, it is unlikely that emergency managers will ask you to evacuate. That means that it is important for you and your family to have a plan that makes you as safe as possible in your home.

A Family Plan

- ✓ Discuss the type of hazards that could affect your family. Know your home's vulnerability to storm surge, flooding and wind.
- ✓ Locate a safe room or the safest areas in your home for each hurricane hazard. In certain circumstances the safest areas may not be your home but within your community.
- ✓ Determine escape routes from your home and places to meet. These should be measured in tens of miles rather than hundreds of miles.



FAMILY DISASTER PLAN

- Discuss the type of hazards that could affect your family. Know your home's vulnerability to storm surge, flooding and wind.
- Locate a safe room or the safest areas in your home for each hurricane hazard. In certain circumstances the safest areas may not be your home but within your community.
- Determine escape routes from your home and places to meet.
- Have an out-of-state friend as a family contact, so all your family members have a single point of contact.
- Make a plan now for what to do with your pets.
- Post emergency telephone numbers by your phones and make sure your children know how and when to call 911 or emergency services.
- Check your insurance coverage - flood damage is not usually covered by homeowners insurance. National Flood Insurance Program.

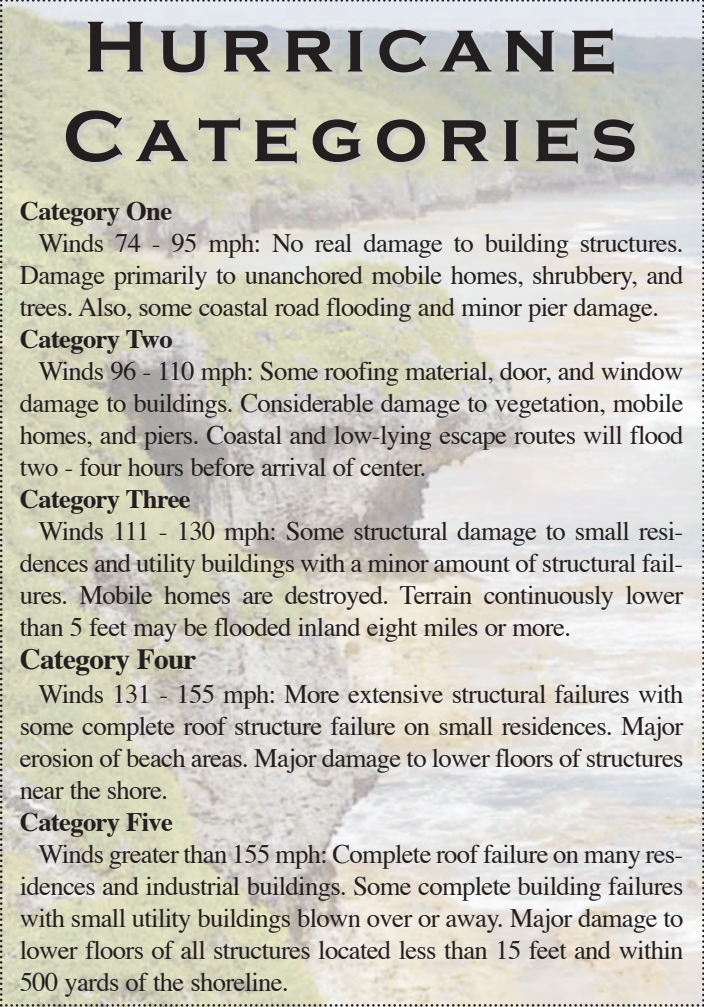
Hurricane Andrew caused East Coast residents millions of dollars in property damage.

- ✓ Have an out-of-state friend as a family contact, so all your family members have a single point of contact.
- ✓ Make a plan now for what to do with your pets if you need to evacuate.
- ✓ Post emergency telephone numbers by your phones and make sure your children know how and when to call 911.
- ✓ Check your insurance coverage - flood damage is not usually covered by homeowners insurance.
- ✓ Stock non-perishable emergency supplies and a Disaster Supply Kit.
- ✓ Use a NOAA weather radio. Remember to replace its battery every 6 months, as you do with your

- smoke detectors.
- ✓ Take First Aid, CPR and disaster preparedness classes.
- Disaster prevention includes modifying your home to strengthen it against storms so that you can be as safe as possible. It also includes having the supplies on hand to weather the storm. The suggestions provided here are only guides. You should use common sense in your disaster prevention.
- Disaster Supply Kit**
- ✓ Water - at least one gallon daily per person for three to seven days
 - ✓ Food - at least enough for three to seven days: non-perishable packaged or canned food/juices, foods for infants or the elderly, snack foods, non-elec-

- tric can opener, cooking tools/fuel and paper plates/plastic utensils.
- ✓ Blankets/pillows, clothing - seasonal/rain gear/sturdy shoes, and special items for babies and the elderly.
 - ✓ First aid kit, medicines and prescription drugs
 - ✓ Toiletries, hygiene items, moisture wipes, flashlight, batteries and a radio.
 - ✓ Cash - banks and ATMs may not be open or available for extended periods.
 - ✓ Keys, toys, books and games.
 - ✓ Important documents in a waterproof container: insurance, medical records, bank account numbers, social security card, etc.
 - ✓ Tools - keep a set with you during

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HURRICANE CATEGORIES

Category One
Winds 74 - 95 mph: No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal road flooding and minor pier damage.

Category Two
Winds 96 - 110 mph: Some roofing material, door, and window damage to buildings. Considerable damage to vegetation, mobile homes, and piers. Coastal and low-lying escape routes will flood two - four hours before arrival of center.

Category Three
Winds 111 - 130 mph: Some structural damage to small residences and utility buildings with a minor amount of structural failures. Mobile homes are destroyed. Terrain continuously lower than 5 feet may be flooded inland eight miles or more.

Category Four
Winds 131 - 155 mph: More extensive structural failures with some complete roof structure failure on small residences. Major erosion of beach areas. Major damage to lower floors of structures near the shore.

Category Five
Winds greater than 155 mph: Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Major damage to lower floors of all structures located less than 15 feet and within 500 yards of the shoreline.

Scientist predict busy 2004 hurricane season

REUTERS

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The Atlantic-Caribbean hurricane season will be busier than average with 14 named storms, eight of which will become hurricanes, a well-known cyclone researcher said in a revised forecast recently.

Of the eight anticipated hurricanes, three will become intense, with winds over 111 mph, Colorado State University storm researcher William Gray predicted.

Gray's forecast for the season that runs from June 1 to Nov. 30 was unchanged from his last forecast on April 2, but added one more named storm than his team's initial forecast in December.


Circular tropical weather systems are given names when sustained winds reach 39 mph and become hurricanes when

they hit 74 mph.

The long-term average for the Atlantic-Caribbean season is 9.6 named storms, with 5.9 of those reaching hurricane strength and 2.3 of those becoming intense.

"Global predictors obtained and analyzed through this point in May consistently point to the 2004 Atlantic basin hurricane season being an active one," Gray said. "We expect tropical cyclone activity to be well above average with about 145 percent of the average seasonal activity."

Government forecasters with the U.S. National Oceanic and Atmospheric Administration also predicted a busier-than-average hurricane season this year. Their forecast, issued earlier this month, anticipated 12 to 15 tropical storms, with six to eight of those becoming hurricanes, and two to four becoming major hurricanes.



If a hurricane comes ...

BE PREPARED, STAY RELAXED

There are many local and national organizations that provide helpful information and direction many days in advance.

Local Resources	National Resources
1. www.mcrdpi.usmc.mil - For the most up-to-date information as a storm approaches.	1. www.nhc.noaa.gov - The National Hurricane Center.
2. www.state.sc.us/emd - Obtain a 2004 South Carolina hurricane guide, current storm news and related articles.	2. www.weather.com - The Weather Channel's official Web site.
	3. www.accuweather.com - Local and world forecasts.